

From wang!elf.wang.com!ucsd.edu!info-hams-relay Mon Apr 1 09:00:03 1991 remote  
from tosspot  
Received: by tosspot (1.64/waf)  
via UUCP; Mon, 01 Apr 91 20:28:52 EST  
for lee  
Received: from somewhere by elf.wang.com id aa12094; Mon, 1 Apr 91 9:00:02 GMT  
Received: from ucsd.edu by relay1.UU.NET with SMTP  
(5.61/UUNET-shadow-mx) id AA03045; Mon, 1 Apr 91 02:55:32 -0500  
Received: by ucsd.edu; id AA20595  
sendmail 5.64/UCSD-2.1-sun  
Sun, 31 Mar 91 22:48:46 -0800 for brian  
Received: by ucsd.edu; id AA20563  
sendmail 5.64/UCSD-2.1-sun  
Sun, 31 Mar 91 22:48:39 -0800 for /usr/lib/sendmail -oc -odb -oQ/var/spool/  
lqueue -oi -finfo-hams-relay info-hams-list  
Message-Id: <9104010648.AA20563@ucsd.edu>  
Date: Sun, 31 Mar 91 22:48:37 PST  
From: Info-Hams Mailing List and Newsgroup <info-hams-relay@ucsd.edu>  
Reply-To: Info-Hams@ucsd.edu  
Subject: Info-Hams Digest V91 #255  
To: Info-Hams@ucsd.edu

Info-Hams Digest                      Sun, 31 Mar 91                      Volume 91 : Issue 255

Today's Topics:

- a few fundamental questions about RF signals
- Antenna matching problem for novice
- Call for Votes (CFV): soc.veterans
- Computer Interference
- Feed lines
- First No-code Tech?
- frequency standards
- Looking for info on a specific freq. band
- Looking for info on TS530S
- Manual for Dentron DTR-2000L
- new callsign server features
- Newer HF rigs
- P40V
- PROPAGATION FORECAST BULLETIN 11 ARLP011
- Ramsey QRP hf kits
- RM-4976?
- Two Questions

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----  
Date: 30 Mar 91 15:56:33 GMT  
From: ogicse!emory!wa4mei!ke4zv!gary@ucsd.edu  
Subject: a few fundamental questions about RF signals  
To: info-hams@ucsd.edu

In article <1991Mar27.203003.11457@cunixf.cc.columbia.edu>  
mig@cunixb.cc.columbia.edu (Meir) writes:

>  
>What about putting a transformer and an audio transducer on an HF or MF or LF  
>rig? Could we have QSOs using ultrasonics?

Yes. The Navy routinely uses such systems. Ultrasound is very short range  
in air, much better in water, and fantastic along a stretch of \*welded\*  
railroad rail.

There is an abandoned railroad line that passes through my farm. We have  
pumped straight audio into one end and listened with a contact mike at  
the other. This works ok, but gets progressively more garbled the farther  
down the rail you go. Maximum usable range was a little over half a mile.  
With a 10 watt LF transmitter matched to a piezo tweeter on one end, and a  
LF receiver fed by a ceramic phono cartridge on the other, very good SSB  
contacts were made up to almost ten miles. We ran out of rail before  
we ran out of range.

This isn't RF at all, it's modulated ultrasound. We had to stay around  
100 khz because we couldn't come up with transducers that worked above  
that and because our comm receiver didn't go below that. I think lower  
frequencies might work better.

Another odd ball wireless communications system uses the sheet conductivity  
of the earth. If you drive a couple of stakes in the ground and feed  
them with the output of an audio amp, you can drive another set of stakes  
a considerable distance away and hook them to a preamp and listen to the  
audio quite clearly. The farther apart you place the stakes of each pair  
the better, up to the limit of the impedance you can drive with your  
audio amp. It should be possible to use SSB here too, but I haven't  
tried it.

Gary KE4ZV

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Date: 31 Mar 91 18:55:35 GMT  
From: usc!zaphod.mps.ohio-state.edu!sol.ctr.columbia.edu!emory!wa4mei!ke4zv!  
gary@ucsd.edu  
Subject: Antenna matching problem for novice  
To: info-hams@ucsd.edu

In article <22149@yunexus.YorkU.CA> landolt@yunexus.YorkU.CA (Paul Landolt)  
writes:

>  
>I had bought an antenna that was 'precisely matched at the factory". So, this  
>is a fiberglass, top-load antenna with a 10ft cable (the whole mess is set for  
>an impedance of 50 ohms). I remember in my readings that the antenna cable  
>becomes part of the antenna (for the sake of matching/tuning), and that  
>changing the cable length will change the match.

True.

>My question is: How would I match the impedance if I changed the cable length?  
>Ie, from 10ft to 15ft? Do I need to get a SWR meter and a matching box? Add  
>some impedance matching resistors to the line? (Radio Shack sold an 8hm, 20W  
>one). Is there a set formula for calculating the resistance needed to re-match  
>the line?

Ouch! No resistors please. That just throws useful power away as heat.

First understand that changing the line length won't change the SWR on the line. The SWR is strictly determined by the degree of mismatch between the line and the load. Changing the line length will change the impedance seen at the transmitter feedpoint. The line acts as a transmission line transformer when the SWR is anything other than unity. Now as you rotate around the constant SWR circle on the Smith Chart (changing the line length), you will see the resistive component of the impedance change \*and\* you will see a reactive component appear and change. You want the resistive component to match the output impedance of your transmitter and you want to eliminate the reactive component. There are several ways to deal with the reactive component. You can tune it out with a tuner, but if you have a tuner, you don't really care what the line length is anyway since you can just tune for a perfect match. You can mistune the antenna to introduce reactance of the opposite sign and cancel the reactance this way. You don't really want to do this because it reduces antenna efficiency somewhat and besides your antenna isn't adjustable in this case anyway. And third you can let the reactance become part of the transmitter output network. This will cause the transmitter to want to see some resistive impedance other than 50 ohms at its output. This is fine, but it means you have to iterate your solution back and forth on the Smith Chart a few times to hit the right cable length. Using transmission line transformer

techniques like this is only useful over a narrow band of frequencies. But since the width of the CB band is a small percentage of the CB frequencies, this will suffice.

As far as test equipment is concerned, the best instrument is an antenna operating impedance bridge. But failing that a good SWR meter, a Smith Chart, and a good grasp of transmission line theory will carry the day. Read your SWR, locate the corresponding constant SWR line on the Smith Chart, move around the circle by the electrical length of the line and read off the complex impedance that your transmitter is looking into. Now continue moving around the chart until you reach a line length that gives you a better resistive match. Read off the reactance and calculate what impedance your transmitter \*now\* wants to see given that parallel capacitance or inductance across it's output network. Now move back around the chart until you split the difference between the original match point and the newly calculated point. Redo the calculation and repeat until the error drops to some tolerable number, epsilon. Add that much cable and you're done.

Gary KE4ZV

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Date: 31 Mar 91 15:47:34 GMT  
From: swrinde!zaphod.mps.ohio-state.edu!unix.cis.pitt.edu!gvlf3.gvl.unisys.com!  
lock60!veterans@ucsd.edu  
Subject: Call for Votes (CFV): soc.veterans  
To: info-hams@ucsd.edu

First Call for Votes  
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NAME: soc.veterans

STATUS: unmoderated

CHARTER: For socializing between veterans of military service, and  
the discussion of social issues relating to veterans.

Background:

On March 9, JEWELLLW@vm.cc.purdue.edu (Larry W. Jewell) posted the first RFD for this group. Although he originally called for the creation of "talk.veterans", he has since agreed that "soc" is probably a better hierarchy for the group. There was also a discussion of creation of a veterans group over in "alt", the proponents over there have agreed to wait for the outcome of a vote for a mainstream group. Although the group will be primarily

concerned with the issues relating to US veterans, some issues relate to veterans of all countries. Posters will be encouraged to limit distribution of articles relating to US-only issues via the use of the "Distribution: us" header.

How to vote:

Mail (not post) your vote to one of the addresses below. Indicate clearly whether you are voting YES or NO either in the subject or the body of the message. I'll be counting these by hand, so there's no specific format required - just make it clear which way you're voting. Here are the addresses:

internet:

veterans@Canal.ORG (the Reply-To: address of this article)

uucp:

lock60!veterans

clueless internet:

veterans%canal.org@gvlv2.gvl.unisys.com [128.126.220.102]

pathless uucp:

uunet!cbmvax!gvlv2!lock60!veterans

Voting Period:

Starts: March 31

Ends: April 30

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Mark H. Weber ( mhw@Schuylkill.Canal.Org ) "Schuylkill" (skool' kill)  
Mont Clare ( ...!uunet!cbmvax!gvlv2!lock60!mhw ) is a Dutch word meaning  
PA USA "hidden river"

-----  
Date: 30 Mar 91 14:59:45 GMT  
From: ogicse!emory!wa4mei!ke4zv!gary@ucsd.edu  
Subject: Computer Interference  
To: info-hams@ucsd.edu

In article <1991Mar27.063235.25264@bradley.bradley.edu> moodyblu@buhub.bradley.edu (Matthew Weisberg) writes:

>Hello all. I am having an interference problem. I have an old Regency  
>HR-2A crystal controlled 2m transciever on loan to me. However, I am  
>getting quite a bit of RF intergerence from my Altima NSX laptop computer.  
>Does anyone have any ideas how I can cut down that interference? Thanks!

>  
>

>Matt Weisberg (still waiting!)

Welcome to ham radio in more ways than one. First we're glad you're here. Second, welcome to the world of interference.

The HR-2A was notorious in it's day for having very little selectivity. It used to be said that you didn't need a scanner if you had a HR-2A since it received \*all\* frequencies at once. :-)

Computers, with their healthy 5 volt square waves, are a prime cause of broad band and narrow band interference.

Your first consideration should be to locate your antenna as far away from the computer as possible. Secondly, make sure all cables connected to the computer are well shielded. Third, use toroid cores on the cables. Now much of your interference is probably being generated by the display. This is a hard problem. You need to shield the display while at the same time still be able to see the display. GC and others make aerosol spray coatings that help RFI proof plastic cabinets. If you dare, disassemble your computer and spray this stuff liberally on the inside of the case. That's about as far as you can go without redesigning your computer.

Good Luck.

Gary KE4ZV

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Date: 31 Mar 91 17:53:59 GMT

From: usc!zaphod.mps.ohio-state.edu!sol.ctr.columbia.edu!emory!wa4mei!ke4zv!  
gary@ucsd.edu

Subject: Feed lines

To: info-hams@ucsd.edu

In article <1991Mar29.044134.613@bradley.bradley.edu> moodyblu@buhub.bradley.edu (Matthew Weisberg) writes:

>Hello. As a new ham awaiting my license, I have been figuring out what I  
>am going to do for an antenna. As a renter, I am limited, but I have  
>decided to put up a dipole outside right now (I live in a duplex).  
>However, I am trying to figure out how I am going to get the feedline into  
>the house. My landlord will not let me make another hole in the wall, so I  
>was thinking about bringing it in through the same hole the CATV line comes  
>in. Will this create any problems with the cables so close?? Does anyone  
>have any better ideas on how to get a feedline inside without making new  
>holes in the wall?? Thanks..

If you are running any reasonable amount of power, you \*will\* cross couple enough into the CATV system to make TV viewers very unhappy with you. You should feed the cables through \*separate\* pieces of metal conduit where they run side by side. Perhaps a better "no holes" solution to your problem is the old cable through the window trick. Just cut a board so that the window can close tightly on it, drill the board for your cables and have fun.

Gary KE4ZV

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Date: 31 Mar 91 22:38:19 GMT  
From: usc!wuarchive!rex!ukma!usenet.ins.cwru.edu!hal.CWRU.Edu!rab@ucsd.edu  
Subject: First No-code Tech?  
To: info-hams@ucsd.edu

K1MAN just broadcast a report that the first no-code tech license was issued to Robert Williams of Annapolis, Maryland. He was issued the call N3IFY.

Roger N8NNK/AE

--  
Roger Bielefeld        Case Western Reserve University  
rab@hal.cwru.edu      Cleveland, Ohio    USA

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Date: 30 Mar 91 17:45:28 GMT  
From: usc!zaphod.mps.ohio-state.edu!sample.eng.ohio-state.edu!phonon!rlong@ucsd.edu  
Subject: frequency standards  
To: info-hams@ucsd.edu

I recall reading once that the tv networks use rubidium clocks to set the color burst frequency and that you could pick off a signal from your home tv which would essentially give you access to a frequency standard of laboratory accuracy. There was a caveat that you had to be careful to get a live broadcast.

Can anyone give me a reference to this? I checked indexes in QST and HR but did not find anything. Ramsey Electronics used to sell a "Color Burst Adapter" for their counters for \$14.95 but they no longer sell it and I can not seem to get through their order-taker layer to find if they have a schematic of the former product.

Has anyone tried this in the past? What results did you have?

--

Ronald K. Long  
Ohio State Univ EE Dept., 2015 Neil Ave., Columbus, OH 43210  
rlong@phonon.eng.ohio-state.edu

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Date: 30 Mar 91 15:16:55 GMT  
From: ogicse!emory!wa4mei!ke4zv!gary@ucsd.edu  
Subject: Looking for info on a specific freq. band  
To: info-hams@ucsd.edu

In article <2412@stsci.EDU> tullos@stsci.EDU (Calvin Tullos) writes:

>

>I'm looking for information on who might be broadcasting  
>between 174 MHZ and 199 MHZ.....

TV broadcast channels 7 thru 11.

Gary KE4ZV

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Date: 31 Mar 91 21:35:11 GMT  
From: usc!samsung!rex!ukma!usenet.ins.cwru.edu!news@ucsd.edu  
Subject: Looking for info on TS530S  
To: info-hams@ucsd.edu

I'm a newly licensed ham in the market for my first rig.  
I have a chance to buy a TS530S (not TS530SP) from a local  
ham, together with the SP-230 speaker and MC-50 microphone.

I would appreciate any personal experiences, pro or con,  
with this rig. Please e-mail to rab@hal.cwru.edu.

Thanks and 73,  
Roger N8NNK/AE

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Roger Bielefeld        Case Western Reserve University  
rab@hal.cwru.edu      Cleveland, Ohio   USA

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Date: 1 Apr 91 05:50:23 GMT  
From: sdd.hp.com!zaphod.mps.ohio-state.edu!magnus.acs.ohio-state.edu!tut.cis.ohio-state.edu!pacific.mps.ohio-state.edu!linac!att!cbnewsj!k2ph@ucsd.edu  
Subject: Manual for Dentron DTR-2000L  
To: info-hams@ucsd.edu



I am looking for a manual for the Dentron DTR-2000L. Will gladly pay copying and shipping charges.

Oh yes, Hi Manuals in Council Bluffs, Iowa has absolutely no Dentron manuals. Sigh.

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=====  
Bob Schreibmaier K2PH | UUCP: ...!att!oblivion!k2ph  
AT&T Bell Laboratories | Internet: k2ph@oblivion.att.com  
Lincroft, N.J. 07738 | ICBM: 40o21'N, 74o8'W

-----  
Date: 31 Mar 91 23:32:48 GMT  
From: swrinde!zaphod.mps.ohio-state.edu!ub!bowen@ucsd.edu  
Subject: new callsign server features  
To: info-hams@ucsd.edu

As promised, I managed to find some time over Easter to add some features to the callsign server on marvin. I didn't get as much done as I had hoped but I still made some major improvements that I think you're gonna like...

- 1) I got a copy of the Canadian database (from someone in Waterloo but I don't remember who - sorry) and merged that into the server so now you're able to get service for most of North America. The DOC database wasn't anywhere near the same format as the FCC stuff so I had to write a little AI (read "guessing") program to parse out the cities and provinces. As a result, I can't guarentee all of the entries got converted properly but estimates suggest I got over 99% of them right. Thanks to my Canadian partner Ken for explaining all the abbreviations to me... 8-)
- 2) After many many many many requests, I decided to back off from position regarding zip code searches and I added a search by zip code command. This will better help those clubs that need to send out mailings of upcoming events, etc. Please don't abuse this feature. If you're a club (or an individual) and you use this command please consider sending a donation to Rusty to cover the cost of the database. I don't want the availability of this feature to damage the ability to keep the prices of this data low.
- 3) I also fixed the bug in the date routine and changed some of the output routines. These are pretty minor changes, though.

Let me know if there are any problems. I've also put a copy of the sources on ftp.cs.buffalo.edu if anyone is interested. There is also a copy of the

original and converted Canadian database there. Enjoy...

Devon

-----  
Date: 31 Mar 91 19:01:15 GMT  
From: usc!zaphod.mps.ohio-state.edu!sol.ctr.columbia.edu!emory!wa4mei!ke4zv!  
gary@ucsd.edu  
Subject: Newer HF rigs  
To: info-hams@ucsd.edu

In article <1c4iZ2w163w@w8grt.fidonet.org> w8grt@w8grt.fidonet.org (Jim Grubs)  
writes:

>  
>The TR-7 is one heckuva transceiver. If you homebrewed a digital synthesizer  
>to use in place of the external VFO, you'd have a fine unit the equal of most  
>newer rigs. The 100 hz resolution and the analog VFO are the only areas in  
>which newer rigs top it significantly.

Ah but it's that analog VFO that \*makes\* it such a great receiver. The  
lack of phase noise in that analog VFO means you suffer much less  
reciprocal mixing in the front end. Put a typical noisy synthesizer  
on it and you've just ruined it. Instead just add another decade to  
the frequency counter and enjoy. Oh yes, fix the hum in the audio  
too.

Gary KE4ZV

-----  
Date: 31 Mar 91 19:22:59 GMT  
From: usc!cs.utexas.edu!ut-emx!oo7@ucsd.edu  
Subject: P40V  
To: info-hams@ucsd.edu

CSMSCST@MVS.OAC.UCLA.EDU (Chris Thomas, AA6SQ) says:

>> 2) Does anyone have the QSL route for P40V?

>QSL P40V to AI6A.

I already sent e-mail to the poster, but since this information was  
posted I ought to correct it. The QSL route was AI6V in the past.  
Perhaps it's changed, perhaps AA6SQ is right - but I suspect that  
it hasn't and he isn't. Apologies if the route has changed this  
year.

TW, TO etc. are France, CK/VA are Canada. Consult your ARRL log book or similar source for identification of the prefixes. Some of these calls are just aired during this contest (it is the WPX contest, after all). Two of my favorites this time were FL0P and F1B (the latter perhaps a friend of A1A and J3E?).

Derek Wills (AA5BT, G3NMX)  
Department of Astronomy, University of Texas,  
Austin TX 78712. (512-471-1392)  
oo7@astro.as.utexas.edu  
oo7@emx.utexas.edu

-----  
Date: 1 Apr 91 05:30:24 GMT  
From: usc!zaphod.mps.ohio-state.edu!tut.cis.ohio-state.edu!n8emr!@ucsd.edu  
Subject: PROPAGATION FORECAST BULLETIN 11 ARLP011  
To: info-hams@ucsd.edu

=====  
| Automatic relayed from packet radio via |  
| N8EMR's Ham BBS, 614-895-2553 1200/2400/9600/V.32/PEP/MNP5 |  
=====

ZCZC AP67  
QST DE W1AW  
PROPAGATION FORECAST BULLETIN 11 ARLP011  
FROM TAD COOK, KT7H, SEATTLE, WA  
MARCH 30, 1991  
RELAYED BY KB8NW/OBS & BARF-80 BBS  
TO ALL RADIO AMATEURS

This past week we witnessed the most intense geomagnetic storm and associated HF communications blackout of this solar cycle. Things started happening on March 22 when a major X class flare ripped out of region 6555 on the Sun. Over the next few days, the Earth was blasted with showers of protons from wave after wave of intense solar flares. This was an event rivaled only by the flares of March, 1989, although the effect on the Earth's magnetic field and radio communications was much greater this time.

The Boulder K index went as high as eight on March 24 and 25. This is a value that during unstable conditions is around three, and has a full scale value of nine. Intense auroral activity produced long distance propagation on the two meter band, and the Northern Lights were seen as far south as Texas and Georgia. Many users of the HF spectrum thought that their receivers were dead. The solar flux reached 260 on the 24th, while the planetary A index was 115. Under

normal conditions the A index is less than 10.

At the time this bulletin was written on Wednesday, things are quieting down and long range HF propagation is coming back. The NOAA Space Environment Service Center forecasts solar flux after March 30 to drop below 200, stay around 180 for several days, and then rise to 195 on April 4. A steady rise in flux values should follow, reaching a peak of around 270 on April 18. Region 6555 will have rotated beyond view by the time this bulletin is transmitted, although terrestrial effects from a major flare from beyond the limb are possible into early April.

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Date: 31 Mar 91 19:20:11 GMT  
From: mnemosyne.cs.du.edu!mercury.cair.du.edu!orion.cair.du.edu!  
awinterb@uunet.uu.net  
Subject: Ramsey QRP hf kits  
To: info-hams@ucsd.edu

Has anyone ordered and built one of the Ramsey QRP cw kits for hf or one of the associated direct conversion receivers? I'm especially interested in:

1. The speed with which Ramsey ships these units.
2. Whether the kits are missing any components which must be re-ordered from Ramsey.
3. The quality of the instructions that come with the kits.
4. The type of calibration/alignment instruments needed.

Thanks

Art  
awinterb@udenva

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Date: 28 Mar 91 00:48:58 GMT  
From: newstop!jethro!caliban.Sun.COM!tjonz@sun.com  
Subject: RM-4976?  
To: info-hams@ucsd.edu

On this week's edition of "Newsline", there was an item concerning something

called RM-4976, which is presumably a proposed change to Part 97 that addresses the responsibility of repeater operators and BBS sysops for traffic which passes through their systems. The "Newsline" story encouraged all hams to write the FCC in support of RM-4976, and to do so quickly, since the comment period apparently closes April 5.

This is the first I had heard of RM-4976. Does anybody have a copy of these proposed changes? I think this is an important issue and will gladly take the time to make comments to the FCC. I'm kinda old fashioned, though, in that I generally prefer to understand a proposal before I decide whether or not to support it. ;-)

Todd, KB6JXT

-----  
Date: 31 Mar 91 17:15:00 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Two Questions  
To: info-hams@ucsd.edu

> 1) Are there countries whose call signs are not listed in  
> the international call book? For example, TW1C, CK7C.  
> If so, how do you find them for a QSL?  
>  
> 2) Does anyone have the QSL route for P40V?

QSL P40V to AI6A. Be sure and include an SASE. There are many hams not in the callbook, or who have QSL managers. An inexpensive source for some of this information is Chod Harris' monthly column in CQ magazine. More complete information is available in publications of QSL manager lists. One of the best known (and best) of these is "The W6GO/K6HHD QSL Manager List", usually called the "GO list", which is published monthly. For info, send an SASE to Box 700, Rio Linda, CA 95673-0700. If there is a DX packet cluster in your area, the GO list may be available online, provided courtesy of those cluster users who support the GO list by subscribing to it. Try SHOW/QSL xxxxx.

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Date: 31 Mar 91 18:13:33 GMT  
From: usc!sdd.hp.com!zaphod.mps.ohio-state.edu!sol.ctr.columbia.edu!emory!wa4mei!ke4zv!gary@ucsd.edu  
To: info-hams@ucsd.edu

References <161@decabo.enet.dec.com> ,

<1991Mar29.011713.10365@bellcore.bellcore.com>, <6d9frnn@rpi.edu>  
Reply-To : gary@ke4zv.UUCP (Gary Coffman)  
Subject : Re: the Freeband below 10 meters

In article <6d9frnn@rpi.edu> luigi@aix01.aix.rpi.edu (John L Luigi Giasi) writes:

>In article <1991Mar29.011713.10365@bellcore.bellcore.com>

karn@thumper.bellcore.com writes:

>>I know it may seem amusing, but tower painting (and lighting) is a  
>>serious aviation safety issue. I worked at a PBS UHF TV station in the  
>>middle 1970s, and when we had extended power failures at night a very  
>>high priority was to get the backup generator powering the lights on  
>>our 700' tower.

>

>I agree that tower visibility is an important issue, but should it be an FCC  
>problem. With my limited broadcast radio experience (a few years at WRPI,  
>home to a 600+ foot tower) I always remeber that whenever power failed or  
>a light blew on the tower, it was the FAA that we called to warn, and they  
>were the ones on our back about the tower.

The FCC has legal authority over \*all\* transmitting equipment, including  
antennas and their supporting towers. The FAA got on their butts about  
lax painting and lighting enforcement after two separate incidents where  
planes hit improperly marked towers and loss of life resulted. The FCC  
is \*really\* serious about this and is handing out maximum fines to violators.

This impacts ham radio because many of us operate repeaters with antennas  
on towers that fall under FCC regulation. The FCC will fine \*each\* and  
\*every\* operator of a licensed transmitter on an offending tower. A few  
days of \$10,000 a day fines would shut down most radio clubs and take  
the home of the trustee whose license is on the repeater.

They are really really serious about this. They hit one of the local  
cellular providers with \$50,000 in fines for one tower that was still  
under construction that was improperly marked. Even though the contractor  
hadn't yet turned the tower over to the cell company, the tower was on  
their construction permit and \*they\* were responsible. It took them five  
days of serious scrambling to get the tower lit and painted properly  
and the FCC fined them the maximum each of those days. Anybody who  
operates a repeater on a structure over 125 feet tall had better do  
some quick checking to make sure it complies with the rules. If it  
doesn't, I'd suggest you pull your equipment off the tower pronto.

The FCC has already been around inspecting the tower that the KE4ZV  
repeater is on. They grouched about the paint chalking, but we were  
able to show the inspector that the tower had been painted with the  
specified paint less than five years ago so we were within the letter  
of the law. I'd fixed a burnt out bulb just the day before. Whew!

Gary KE4ZV

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End of Info-Hams Digest

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